

## REMARKS

The Examiner has rejected the application on various bases. In response thereto, Applicant has provided the following remarks which set forth the reasons as to why the claims, as originally filed, overcome the prior art of record.

At the outset, Applicant acknowledges that claims 3 and 6 have been deemed allowable at the present time.

The Examiner has rejected claims 1 and 4 under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, the Examiner has stated that "an optical mode cannot possess an index of refraction." Applicant traverses the Examiner's rejection. In particular, it is well known to one of skilled in the art that the guided optical modes of an optical fiber are determined from the fiber's dispersion relationship. From the dispersion relationship, the phase velocity of each mode may be solved exactly. The complete mode may be constructed by matching the boundary conditions at the various interfaces of the fiber. As is well known in the art, the effective index of refraction of the optical mode is found from the phase velocity, by  $n_{eff} = c_o / v_p$  where  $c_o$  is the speed of light in free space, and the phase velocity  $v_p$  is found by solving the dispersion relationship. Thus, and contrary to the assertion of the Examiner, an optical mode does indeed possess an index of refraction. Accordingly, Applicant respectfully requests the withdrawal of the presently pending rejection under 35 U.S.C. §112, second paragraph.

The Examiner has rejected claims 1, 2, 4 and 5 under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,913,521 issued to Tajima et al (the '521 patent). Applicant traverses the Examiner's rejection. In particular, and among other positions taken by the Examiner relative to the '521 patent, the Examiner states that the '521 patent "further teaches that the second cladding 5 having (sic) an acoustic wave velocity (shear velocity) larger than that of

the first cladding 4 but smaller than that of the core 1. (See at least Fig. 16C and its description)."

Applicant disagrees with the Examiner's assertion. In particular, the Figure 16C discloses the longitudinal velocity profile of the embodiment shown in Figure 16A. Furthermore, the specification of the '521 patent, at Col. 14, line 60 through Col. 15, line 28, fully explains that what is at issue in the '521 patent relative to the embodiment of Figure 16 is the longitudinal velocity. Quite to the contrary, Applicant's claim 1 claims specific parameters for the acoustic shear velocity – not the longitudinal velocity.

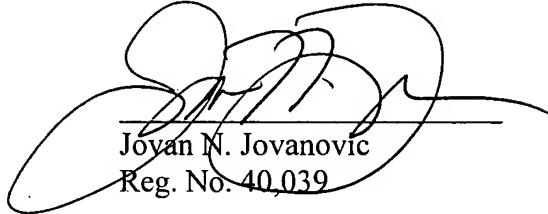
However, the '521 patent is silent as to the shear velocity and describes only the longitudinal velocity. Moreover, the shear velocity profile cannot even be determined from the disclosure in the '521 patent, as it is not directly related to the longitudinal velocity or to the other parameters which have been identified. To be sure, the '521 patent does not disclose or suggest the shear velocity specifically claimed in Applicant's claim 1. In turn, Applicant submits that claim 1 should be deemed allowable over the prior art of record.

In light of the foregoing, Applicant submits that claims 1 through 6 should be deemed allowable at the present time. Reconsideration is respectfully solicited.

Should anything further be required, a telephone call to the undersigned as (616) 855-1521 is respectfully solicited.

Respectfully submitted,

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